PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: STUELPNAGEL, et al.

Serial No. 09/636,387

Filed: August 9, 2000

For: AUTOMATED INFORMATION PROCESSING IN RANDOMLY ORDERED ARRAYS

Examiner: Not assigned

Group Art Unit: ~~1645~~ 1655

CERTIFICATE OF MAILING

I hereby certify that this correspondence, including listed enclosures, is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Box Missing Parts, Assistant Commissioner for Patents, Washington, DC 20231 on 6/18/01.

Signed: _____
Fern S. Marder

RESPONSE TO RESTRICTION REQUIREMENT

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

This is in response to the Restriction Requirement mailed May 18, 2001 This response is being filed on or before the deadline of June 18, 2001. No fees are believed due. The Commissioner is authorized to charge additional fees which may be required, including extension fees, or credit any overpayment, to Deposit Account No. 06-1300 (Our Order No. A-67616-2/DJB/RMS/DCF)

Response to Restriction

In response to the Restriction Requirement, Applicants elect for further prosecution the claims of Group VI, namely Claims 49-54. This election is made without traverse. Applicants draw the Examiner's attention to a typographical error in the numbering of the Groups. There is no Group III listed. As such, while the elected Group is the fifth group, it is numbered Group VI.

Amendments

In the Specification

Please replace the paragraph beginning at p. 1, line 2 with the following rewritten paragraph:

--This application is a continuing application of U.S.S.N 09/500,555, filed February 9, 2000 and claims the benefit of U.S.S.N. 60/119, 323, filed February 9, 1999, both of which are expressly incorporated herein by reference.--.

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In the Claims

Please cancel claims 1-48 and 55-60 without prejudice as drawn to a non-elected invention.

Please amend the claims as follows:

49. (Amended) A method of determining the presence of a target analyte in a sample comprising:

a) acquiring a first data image of a random array composition comprising:

i) a substrate with a surface comprising discrete sites; and

ii) a population of microspheres comprising at least a first and a second subpopulation each comprising a bioactive agent;

wherein said microspheres are randomly distributed on said surface such that said discrete sites contain microspheres;

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b) registering said first data image to create a registered first data image;

c) contacting said random array composition with said sample;

d) acquiring a second data image from said array with said sample;

e) registering said second data image to create a registered second data image; and

f) comparing said first and said second registered data images to determine the presence or absence of said target analyte.

50. (Amended) The method according to claim 49 wherein said random array comprises a fiber optic bundle and the registration of said first data image utilizes a fiducial fiber.

51. (Amended) The method according to claim 49 wherein said random array comprises microspheres and the registration of said first data image utilizes a fiducial microsphere.

52. (Amended) The method according to claim 49 wherein the registration of said first data image utilizes a fiducial template.

53. (Amended) The method according to claim 49 wherein said bioactive agents are proteins.

54. (Amended) The method according to claim 49 wherein said bioactive agents are nucleic acids.

Please add the following new claims:

--61. (New) A method of determining the presence of a target analyte in a sample comprising:

a) providing a registered first data image of a random array composition comprising:

i) a substrate with a surface comprising discrete sites; and

ii) a population of microspheres comprising at least a first and a second subpopulation each comprising a bioactive agent;

wherein said microspheres are randomly distributed on said surface such that said discrete sites contain microspheres;

b) contacting said random array composition with said sample;

c) acquiring a second data image from said array with said sample;

d) registering said second data image to create a registered second data image; and

e) comparing said first and said second registered data images to determine the presence or absence of said target analyte.

62. (New) The method according to claim 49, wherein said substrate is selected from the group consisting of glass and plastic.

63. (New) The method according to claim 49 or 62, wherein said registration of said first data images utilizes a fiducial edge.

64. (New) The method according to claim 49 or 62, wherein at least a first edge of said array is a fiducial edge.

65. (New) The method according to claim 51, 52, 53 or 54, wherein said substrate is selected from the group consisting of glass and plastic.

66. (New) The method according to claim 49 or 62, wherein each subpopulation comprises a unique optical signature.

67. (New) The method according to claim 66, wherein said unique optical signature is a bleed-through signature.

68. (New) The method according to claim 49 or 62, wherein each subpopulation comprises an identifier binding ligand that will bend a decoder binding ligand such that the identification of the bioactive agent can be elucidated.

69. (New) The method according to claim 50, wherein said array comprises at least three fiducials, and each of said fiducials is a fiducial fiber.

70. (New) The method according to claim 69, wherein at least one of said fiducial fibers has a different shape from the others.

71. (New) the method according to claim 69, wherein at least one of said fiducial fibers has a different color from the others.

72. (New) The method according to claim 51, wherein said registration utilizes at least three fiducials and each of said fiducials is a fiducial microsphere.

73. (New) The method according to claim 72, wherein at least one of said fiducial microspheres has a different size from the others.

74. (New) The method according to claim 72, wherein at least one of said fiducial microspheres has a different color from the others.

75. (New) The method according to claim 72, wherein at least one of said fiducial microspheres does not comprise a label.- -.

REMARKS

Claims 49-54 and 61-75 are pending. Claims 1-48 and 55-60 are canceled without prejudice or disclaimer as drawn to a non-elected invention. Claims 50-54 are amended to depend from claim 49. Claim 49 is amended to recite that the microspheres are randomly distributed. Support is found throughout the specification (i.e. p. 6, line 14) and claims as filed. Support for new claims 61-75 is found throughout the application as filed and in the claims as filed. Specifically, claim:

61 finds support in claims 1 and 49 as filed;
62 finds support in claim 5 as filed;
63 finds support in claim 5 as filed;
64 finds support in claim 5 as filed;
65 finds support in claim 5 as filed;
66 finds support in claim 2 as filed;
67 finds support in claim 3 as filed;
68 finds support in claim 4 as filed;
69 finds support in claim 7 as filed;
70 finds support in claim 8 as filed;
71 finds support in claim 9 as filed;
72 finds support at p. 22, line 10 and p. 23, line 20;
73 finds support at p. 23, line 24-25;
74 finds support at p. 23, line 24-25; and
75 finds support at p. 24, line 1.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**" For the Examiner's convenience a clean copy of the currently pending claims is appended hereto as Appendix A.

Applicants submit that the claims are now in condition for allowance and an early notification of such is solicited. Please direct any calls in connection with this application to the undersigned at (415) 781-1989.

Respectfully submitted,

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